

**REMARKS**

Reconsideration and allowance of the above-identified application are respectfully requested.

Claims 1-10, 17-27, 34-39, 44, 46, 48, 50, 51, 54, 55, 58-71 are currently pending, wherein claims 1, 17, 35, 44, 46, 48 and 60 are independent. Claims 11-16, 28-33, 40-43, 45, 47, 49, 52, 53, 56 and 57 have been canceled. Claims 58 and 59 have been amended merely to correct a grammatical error. These amendments do not narrow or otherwise limit the scope of the claims, are not made for any purpose related to patentability, and are fully supported by the present application. No new matter has been introduced by way of these amendments.

Applicants would like to thank Examiner Phuong M. Phu for the personal interview conducted on August 2, 2004. In compliance with M.P.E.P. § 713.04, the substance of that interview is incorporated in the foregoing amendments and in the following remarks.

In the second section of the Office Action, the oath/declaration is objected to for being allegedly defective, because it does not identify the mailing address of each inventor. This objection is respectfully traversed.

According to 37 C.F.R. 1.63(c), “[u]nless such information is supplied on an *application data sheet* in accordance with § 1.76, the oath or declaration must also identify: (1) [t]he mailing address, and the residence if an inventor lives at a location which is different from where the inventor customarily receives mail, of each inventor . . . .” [37 C.F.R. 1.63(c) (emphasis added)] In the Office Action, the Patent Office notes that “[a] mailing address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing address should include the ZIP Code designation.

*The mailing address may be provided in an application data sheet or a supplemental oath or declaration.*" [Office Action, page 2 (emphasis added)]

Applicant respectfully notes that the mailing address of the inventor is listed in the application data sheet submitted with the original filing of the present application. A copy of the application data sheet filed with the present application is included for the convenience of the Patent Office, as well as a copy of the date-stamped postcard indicating that the Patent Office received the application data sheet. The attention of the Patent Office is directed to the section entitled "INVENTOR INFORMATION" in the enclosed application data sheet, under which is listed "Postal Address Line One: 11572 Seven Springs Drive". Also listed under "INVENTOR INFORMATION" is city (i.e., Cupertino), state (i.e., CA), country (i.e., USA), and Postal or Zip Code (i.e., 95014) of the mailing address. Consequently, since the mailing address was supplied in an application data sheet in the original filing of the present application, and the application data sheet complies with 37 C.F.R. 1.76, it is respectfully submitted that the Applicant is in full compliance with all requirements regarding the provision of the mailing address of the inventor, and that a new oath or declaration is not required. Accordingly, reconsideration and withdrawal of these grounds of objection are respectfully requested.

During the interview, the rejection of claims 17-27, 54 and 55 under 35 U.S.C. § 112, second paragraph for alleged indefiniteness was discussed. No agreement was reached. This rejection is respectfully traversed.

With respect to claim 17, the Patent Office asserts that it is allegedly unclear what are the functions or operations of the "subtracting means" with respect to the "high pass filtered

replication signal” and the “transmitted and received signal.” According to M.P.E.P. § 2173.02,

[t]he examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, *not* whether more suitable language or modes of expression are available. . . . Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire. Examiners are encouraged to suggest claim language to applicants to improve the clarity or precision of the language used, *but should not reject claims or insist on their own preferences if other modes of expression selected by applicants satisfy the statutory requirement.* [M.P.E.P. § 2173.02 (emphasis added)]

In addition, the requirements of 35 U.S.C. § 112, second paragraph have been stated as follows:

[i]f the claims, read in light of the specification, *reasonably apprise* those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the statute (35 U.S.C. § 112, second paragraph) demands no more. [M.P.E.P. § 2173.05(a), citing *Shatterproof Glass Corp. v. Libbey Owens Ford Co.*, 758 F.2d 613 (Fed. Cir. 1985) and *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367 (Fed. Cir. 1986) (emphasis added)]

Given the “latitude in the manner of expression and the aptness of terms” afforded to the Applicant, it is respectfully submitted that claim 17 is clear and precise and fully complies with the requirements of 35 U.S.C. § 112, second paragraph. Applicant respectfully notes that claim 17 recites the feature of “*subtracting* means for the high pass filtered replication signal *from* the transmitted and received signals.” Read in light of the specification, it is respectfully submitted that the function and operation of the “*subtracting* means” with respect to the “high pass filtered replication signal” and the “transmitted and received signals” are clear from claim 17, that claim 17 “reasonably apprises” the skilled artisan of the utilization and scope of the invention, and uses language “as precise as the

subject matter permits.” [see, e.g., present application, page 16, lines 3-18] Consequently, it is respectfully submitted that claim 17 particularly points out and distinctly claims the subject matter which Applicant regards as the invention, in satisfaction of 35 U.S.C. § 112, second paragraph. Accordingly, reconsideration and withdrawal of these grounds of rejection are respectfully requested.

During the interview, the rejection of claims 2-5, 6, 8-10, 18-23, 26, 27, 34, 36-39, 50, 51, 54, 55, 58 and 59 under 35 U.S.C. § 112, second paragraph for allegedly being incomplete for omitting essential structural/functional cooperative relationships of elements, such omission allegedly amounting to a gap between the necessary structural/functional connections was discussed. No agreement was reached.. This rejection is respectfully traversed.

With respect to the rejection of claim 2, the Patent Office asserts that the claim allegedly omits the functional/connectivity interrelationships of the isolation transformer with other components in the claim, for making the claimed communication circuit as a complete connective and operative system.

In addition to the discussion of the requirements of 35 U.S.C. § 112, second paragraph, Applicant respectfully notes that it is a fundamental tenet of patent law that a dependent claim incorporates by reference all of the limitations of the claim to which it refers. [see, e.g., 35 U.S.C. § 112, fourth paragraph]. Claim 1 recites the features of “a hybrid *having an input in communication with an output of said near end transmitter*” and “a subtractor to subtract an output from said high pass filter from the output from said near end transmitter and *an output of said hybrid.*” It is respectfully submitted that the functional/connectivity interrelationships between the hybrid and the other components of

claim 1 are distinctly claimed and particularly pointed out, in satisfaction of 35 U.S.C. § 112, second paragraph. [*see, e.g.*, present application, Figure 3A] Claim 2 depends from claim 1 and recites the feature of “wherein said hybrid comprises an isolation transformer.” Since claim 2 incorporates all of the limitations of claim 1, and since the hybrid can comprise an isolation transformer, then the isolation transformer recited in claim 2 incorporates all of the limitations of the hybrid recited in claim 1. Thus, as the hybrid has an input in communication with an output of the near end transmitter, and the subtractor subtracts an output from the high pass filter from the output of the near end transmitter and an output of the hybrid, so does the isolation transformer recited in claim 2.

Thus, contrary to the assertions of the Patent Office, it is respectfully submitted that claim 2 does *not* omit the functional/connectivity interrelationships of the isolation transformer with other components in the claim. The isolation transformer recited in claim 2 incorporates all of the limitations of the hybrid recited in claim 1, and since the functional/connectivity interrelationships of the hybrid with the other components in the claim are specified, so are they too for the isolation transformer of which the hybrid can be comprised. Consequently, as claim 2, read in light of the specification, “reasonably apprises” a skilled artisan of the utilization and scope of the invention as recited in claim 2, and uses language “as precise as the subject matter permits,” it is respectfully submitted that claim 2 fully complies with the requirements of 35 U.S.C. § 112, second paragraph.

Each of dependent claims 3, 5, 6, 8-10, 18, 19, 21, 22, 26, 27, 36, 37, 38, 50, 51, 54, 55, 58 and 59 incorporates by reference all of the limitations of the claim(s) to which each refers. These dependent claims thereby incorporate the functional/connectivity interrelationships that are clearly recited in the claims from which each depends. Thus, for at

least the reasons stated above with regard to claim 2, it is respectfully submitted that dependent claims 3, 5, 6, 8-10, 18, 19, 21, 22, 26, 27, 36, 37, 38, 50, 51, 54, 55, 58 and 59 do *not* omit the functional/connectivity interrelationships of the respective elements with other components in the claims. Rather, it is respectfully submitted that the aforementioned dependent claims, read in light of the specification, “reasonably apprise” a skilled artisan of the utilization and scope of the invention as recited in these claims, and use language “as precise as the subject matter permits,” in full compliance with the requirements of 35 U.S.C. § 112, second paragraph.

With respect to the rejection of claims 4 and 20, the Patent Office asserts that the claims allegedly omit “which functions of the near end replication transmitter [are] adjustable and how the adjustability of these functions affects functionality or [connectivity] on other components in the claim for making the claimed communication circuit as a complete connective and operative system.” [Office Action, page 3]

Applicant respectfully submits that there is no requirement, statutory or otherwise, under the patent laws for the recitation of the level of specificity and detail required by the Patent Office with respect to claims 4 and 20. It is respectfully submitted that the recitation in claims 4 and 20 of the feature that the near end replication transmitter is adjustable, read in light of the specification, “*reasonably apprises* those skilled in the art both of the utilization and scope of the invention” and uses language “as precise as the subject matter permits.”

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[*see, e.g.,* present application, page 17, lines 21-26] Therefore, it is respectfully submitted that claims 4 and 20 fully and completely comply with the requirements of 35 U.S.C. § 112, second paragraph.

If the rejection of claims 4 and 20 is repeated, Applicant respectfully requests that the Patent Office specifically point out the statute or regulation that requires that claims 4 and 20 recite the functions of the near end replication transmitter that are adjustable and how the adjustability of these functions affects the functionality or connectivity of other components in the claim for making the claimed communication circuit as a complete connective and operative system, when claims 4 and 20, read in light of the specification, “*reasonably apprise[]* those skilled in the art both of the utilization and scope of the invention” and use language “as precise as the subject matter permits.” Applicant respectfully submits that no such statute or regulation exists.

For at least the foregoing reasons, it is respectfully submitted that claims 2-5, 6, 8-10, 18-23, 26, 27, 34, 36-39, 50, 51, 54, 55, 58 and 59 fully and completely comply with the requirements of 35 U.S.C. § 112, second paragraph. Accordingly, reconsideration and withdrawal of these grounds of rejection are respectfully requested.

During the interview, the rejection of claims 1-3, 7, 17-19, 24, 35, 36, 39, 44, 46, 48, 55 and 58 under 35 U.S.C. § 102(b) as allegedly being anticipated by Agazzi (U.S. Patent No. 4,999,830, hereinafter “Agazzi”) was discussed. No agreement was reached.

During the interview, Applicant asserted that Agazzi does not disclose several features of the present invention, including, for example, a near end replication transmitter and a high pass filter responsive to the near end replication transmitter. In response, the Patent Office noted that it was interpreting the feature of a “high pass filter” as a *general* filter, not a high pass filter. The Patent Office stated that if the recitation of “a high pass filtering responsive to said near end replication transmitter *for high-pass filtering a signal*

*received from the near end replication transmitter*" was added to the independent claims, such a feature is not disclosed by Agazzi.

Applicant hereby adds new claims 60-71. Independent claim 60 recites the limitation of "a high pass filtering responsive to said near end replication transmitter *for high-pass filtering a signal received from the near end replication transmitter*". Support for new claims 60-71 can be found at least on pages 16-17 and Figures 3A and 3B of the present application. No new matter has been introduced by way of these new claims. Applicant respectfully submits that new claims 60-71 are patentably distinguishable over Agazzi.

In addition, claim 17 recites the feature of "high pass filter means for high pass filtering the replication signal," and claim 35 recites the step of "high pass filtering the replication signal". Therefore, based on the statements made by the Patent Office during the interview, it is respectfully submitted that claims 17-19, 24, 35, 36, 39 and 55 are patentably distinguishable over Agazzi.

However, the rejection of claims 1-3, 7, 17-19, 24, 35, 36, 39, 44, 46, 48, 55 and 58 is respectfully traversed.

The Patent Office asserts that the combination of encoder 101-1 and transmit filter 103-1 illustrated in Figure 1 of Agazzi allegedly discloses the feature of a near end replication transmitter recited in claim 1 of the present application.

Agazzi discloses that "a digital symbol sequence signal  $s_1(t)$  is sent from subscriber terminal 100-1 to terminal 100-2 via a two-wire transmission line 130." [Agazzi, column 2, lines 57-60] "Signal  $s_1(t)$  is applied to encoder 101-1 which produces coded symbols corresponding to a multilevel code representation of the input digital signal." [Agazzi, column 2, line 67 – column 3, line 1] "The digital codes from encoder 101-1 representing the



2B1Q four level code shown in waveform 505 are applied to digital transmit filter 103-1.

The transmit filter reshapes the input from encoder 101-1 to remove high frequency components that would cause unnecessary disturbances on transmission line 130.” [Agazzi, column 3, lines 18-23]

Thus, contrary to the assertions of the Patent Office, it is respectfully submitted that the combination of encoder 101-1 and transmit filter 103-1 is not a near end *replication* transmitter, because the combination of encoder 101-1 and transmit filter 103-1 receives the signal transmitted by the subscriber terminal 100-1, rather than generating a replica of such a signal. The Patent Office's misinterpretation of Agazzi is further demonstrated by the fact that the *same* signal transmitted by the subscriber terminal 100-1 is supplied to the combination of encoder 101-1 and transmit filter 103-1 (which the Patent Office asserts discloses a near end replication transmitter) *and* the combination of D/A converter 104-1 and amp 105-1 (which the Patent Office asserts discloses a near end transmitter).

In addition, the Patent Office asserts that the combination of filter 201 and m-bit digital-to-analog converter 205 illustrated in Figure 2 of Agazzi allegedly discloses the feature of a high pass filter responsive to the near end replication transmitter recited in claim 1 of the present application.

Initially, Applicant respectfully notes that transmit filter 103-1 is a low pass filter, as it “remove[s] high frequency components that would cause unnecessary disturbances on transmission line 130.” [Agazzi, column 3, lines 21-23] Figure 2 of Agazzi illustrates the components of A/D converter 110-1 illustrated in Figure 1. According to Agazzi,

filter 201 operates to convert the digital signal from transmit filter 103-1 into an m bit digital signal corresponding to the near end echo component of the analog signal  $s_a(t)$  appearing at point 207. Digital-to-analog converter 205

transforms the m bit digital signal from filter 201 into an analog signal  $s_{kc}(t)$  that approximates the near end echo component in signal  $s_a(t)$ . [Agazzi, column 4, lines 21-25]

It is respectfully submitted that Agazzi does not disclose that filter 201 is a high pass filter.

Furthermore, according to Agazzi,

filter 201 includes an interpolator to increase the sampling rate of its output signal. Interpolation makes the filter output compatible with the sigma-delta converter. Decimator 235 is used to reduce the sampling rate of the output of digital summing circuit 225 for compatibility with echo canceler 120-1. *It also low pass filters the signal applied thereto and reduces quantizing noise.* [Agazzi, column 4, lines 46-53]

Thus, it is respectfully submitted that the output of A/D converter 110-1 is a low-pass filtered signal. Consequently, it is respectfully submitted that the combination of filter 201 and m-bit digital-to-analog converter 205 does not disclose a high pass filter, as nowhere does Agazzi disclose a high pass filter responsive to a near end replication transmitter.

In addition, the Patent Office has stated that it is interpreting the feature of a "high pass filter" as a *general* filter, not as a high pass filter. It is respectfully submitted that the Patent Office's interpretation of the feature of a high pass filter is not supported by the requirements of the patent laws. According to M.P.E.P. § 2111.01, "[c]laim terms are presumed to have the ordinary and customary meaning attributed to them by those of ordinary skill in the art." [M.P.E.P. § 2111.01 (citations omitted)] "It is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the 'ordinary' and the 'customary' meaning of the terms in the claims." [M.P.E.P. § 2111.01 (citations omitted)] Thus, it is respectfully submitted that Patent Office's interpretation of the feature of a "high pass filter" as a type of filter that is not

a “high pass filter” is in contradistinction to the “ordinary” and “customary” meaning of the term, and is, therefore, not proper.

As Agazzi does not disclose numerous features recited in claim 1 of the present application, including the features of, for example, a near end replication transmitter and a high pass filter responsive to the near end replication transmitter, it is respectfully submitted that Agazzi does not anticipate the subject matter of claim 1.

Independent claims 17, 35, 44, 46 and 48 recite features similar to those recited in independent claim 1, and are, therefore, patentably distinguishable over Agazzi for at least those reasons state above with regard to claim 1.

Dependent claims 2, 3, 7, 18, 19, 24, 36, 39, 55 and 58 variously depend from claims 1, 17, 35, 44, 46 and 48, and are, therefore, patentably distinguishable over Agazzi for at least those reasons stated above with regard to claims 1, 17, 35, 44, 46 and 48.

For at least the foregoing reasons, it is respectfully submitted that Agazzi does not anticipate the subject matter of claims 1-3, 7, 17-19, 24, 35, 36, 39, 44, 46, 48, 55 and 58. Accordingly, reconsideration and withdrawal of these grounds of rejection are respectfully requested.

During the interview, the rejection of claims 4-6, 20-23, 34 and 51 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Agazzi was discussed. No agreement was reached. This rejection is respectfully traversed.

Dependent claims 4-6, 20-23, 34 and 51 variously depend from independent claims 1 and 17, and are, therefore, patentably distinguishable over Agazzi for at least those reasons stated above with regard to claims 1 and 17.

In addition, with respect the rejection of claims 4 and 20, Applicant notes that the Patent Office has taken Official Notice that “using adjustable (adaptive) devices such adaptive filters and/or adaptive amplifier in a system for enhancing signals being processed in the system is well-known in the art.” [Office Action, page 6] Applicant respectfully traverses the assertion of Official Notice.

According to M.P.E.P. § 2144.03, “[t]he examiner may take official notice of facts outside of the record which are capable of instant and unquestionable demonstration as being ‘well-known’ in the art.” In other words, official notice may be taken “[i]f the knowledge [outside of the record] is of . . . notorious character.” [M.P.E.P. § 2144.03] Furthermore, “[i]f the applicant traverses such an assertion the examiner should cite a reference in support of his or her position.” [M.P.E.P. § 2144.03] Pursuant to M.P.E.P. § 2144.03, Applicant traverses the assertion of Official Notice and respectfully requests that the Patent Office cite a document which teaches the purportedly “instant and unquestionable” fact that “using adjustable (adaptive) devices such adaptive filters and/or adaptive amplifier in a system for enhancing signals being processed in the system is well-known in the art,” so that the Applicant has a full and fair opportunity to respond to the combination of documents.

With regards to the rejection of claim 51, Applicant notes that the Patent Office has taken Official Notice that “using amplifiers in a system to amplify or multiply voltage of signals being processed in the system for enhancing these signals is well-known in the art.” [Office Action, page 7] Applicant respectfully traverses the assertion of Official Notice and request that the Patent Office cite a document in support of this contention so that the Applicant has a full and fair opportunity to respond to the combination of documents.

For at least the foregoing reasons, it is respectfully submitted that the Agazzi does not render the subject matter of claims 14-6, 20-23, 34 and 51 obvious. Accordingly, reconsideration and withdrawal of these grounds of rejection are respectfully requested.

All of the objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and a notice to that effect is earnestly solicited. Should the Examiner have any questions regarding this response or the application in general, the Examiner is urged to contact the Applicants' attorney, Andrew J. Bateman, by telephone at (202) 625-3547. All correspondence should continue to be directed to the address given below.

Respectfully submitted,

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